Did You Know…

- According to the CDC, congenital heart defects account for 24% of infant deaths due to birth defects.
- About 300 babies born each year in the U.S. are sent home from the hospital with serious heart defects that went undetected by ultrasounds during pregnancy and examinations after birth.

Critical Congenital Heart Defects detected by pulse oximetry	
Most likely to be detected:	***Less likely to be detected:***
Hypoplastic left heart syndrome	Coarctation of the aorta
Pulmonary atresia (with intact septum)	Double-outlet right ventricle
Tetralogy of Fallot	Ebstein anomaly
Total anomalous pulmonary venous return	Interrupted aortic arch
D-Transposition of the great arteries	Single ventricle
Tricuspid atresia	
Truncus arteriosus	

For More Information:
www.michigan.gov/cchd

Michigan Newborn Screening Program
201 Townsend St.
Lansing, MI 48913
Phone: 517.335.8135
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Michigan Department of Community Health
MDCH
Rick Snyder, Governor

Critical Congenital Heart Disease

Newborn Screening Program

Michigan Department of Community Health

Because every baby deserves a healthy start…

Critical Congenital Heart Disease (CCHD)

About 1 in 100 babies is born with a congenital heart defect (CHD) making CHDs the most common of all birth defects. This adds up to 40,000 newborns with CHDs per year in the United States, with over 1,700 of those born in Michigan. Critical congenital heart diseases are those requiring surgery or catheter intervention in the first month of life.

CCHD Screening

Pulse oximetry has been shown to detect some forms of CHDs in the newborn based on low oxygen levels in the blood. This screening targets twelve specific anomalies classified as CCHD. Failure to detect such heart defects while in the hospital puts the baby at risk for serious complications within the first few days or weeks of life. Frequent emergency room care, potential permanent disability and even death may be the result of delayed treatment.

In 2011, pulse oximetry was recommended by the U.S. Department of Health and Human Services Secretary's Advisory Committee on Heritable Disorders in Newborns and Children as an important screening tool for detection of CCHD in asymptomatic newborns. This recommendation was subsequently endorsed by the American Academy of Pediatrics as a standard of care.

In 2012, the Michigan Department of Community Health (MDCH) implemented the CCHD Newborn Screening Demonstration Program to: 1) increase the number of Michigan newborns screened for CCHD using a validated screening protocol; and 2) to develop state infrastructure for collection of CCHD screening data through electronic health information exchange to enable effective public health follow-up, quality assurance and evaluation.

Michigan CCHD Algorithm

The Michigan algorithm for CCHD screening using pulse oximetry was developed by the Michigan CCHD Advisory Committee based on AAP recommendations.

The algorithm and other educational materials are available for download at the MDCH CCHD website:

www.michigan.gov/cchd

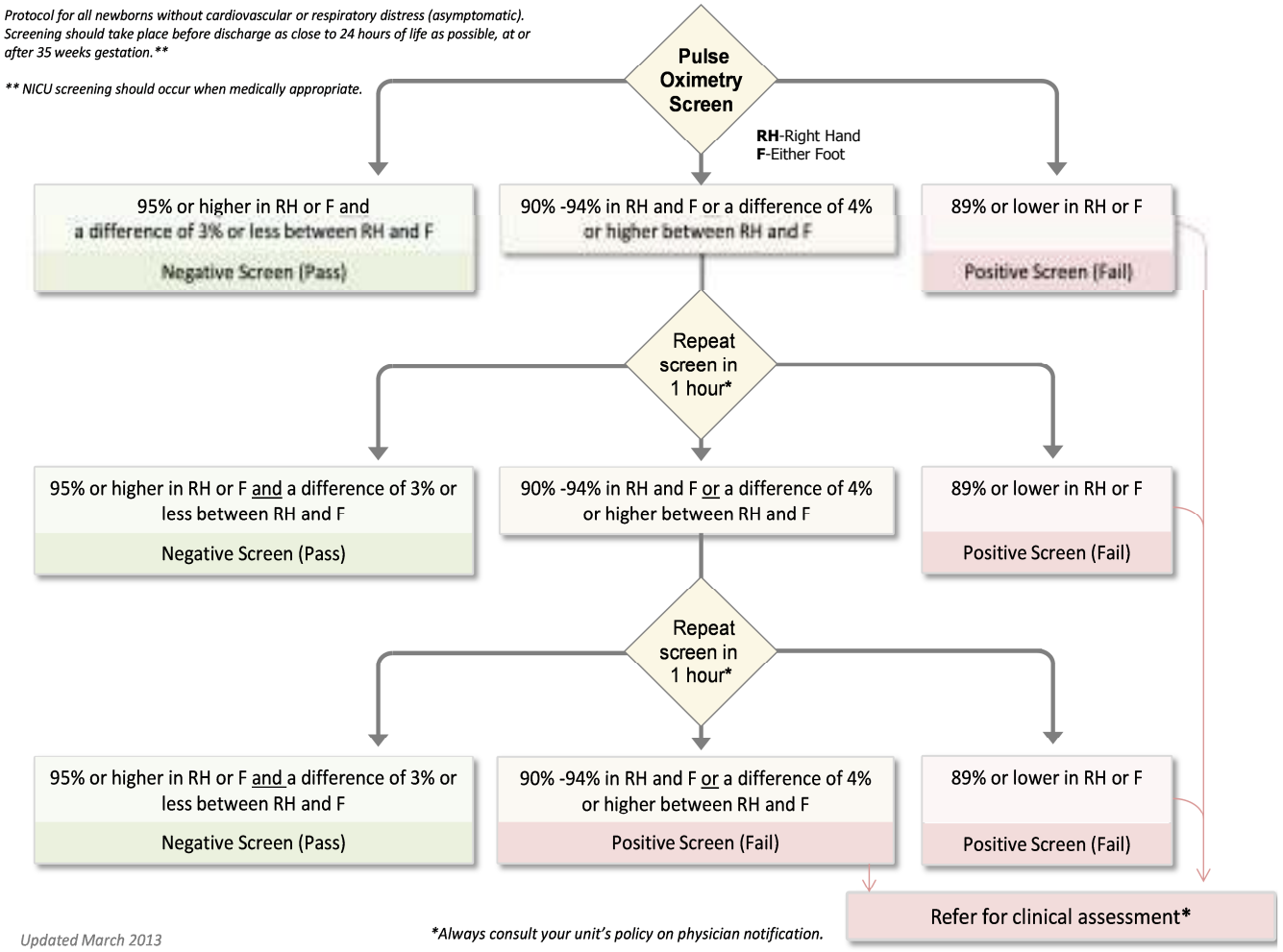
Screening should occur:

- On an infant without respiratory or cardiovascular distress
- As close to 24 hours of life as possible, or prior to discharge
- At or after 35 weeks gestation
- When infant is awake, comfortable, and quiet
- On NICU infants following the protocol when medically appropriate

Michigan Algorithm for Pulse Oximetry Screening

*Protocol for all newborns without cardiovascular or respiratory distress (asymptomatic). Screening should take place before discharge as close to 24 hours of life as possible, at or after 35 weeks gestation.***

*** NICU screening should occur when medically appropriate.*



Updated March 2013

**Always consult your unit's policy on physician notification.*